

70

TITLE: An Automatic Ruling Machine for Printing Screen Gratings.
(Avtomaticheskaya mashina dlya naneseniya deleniya na rastrakh)

of the grating. The grating lines are ruled by a carriage moving along guides on a cross beam normal to the table guides. The carriage is moved by an endless steel tape tensioned by an idler. The line is ruled while the carriage moves in one direction, and the table advance performed during the return motion. The automatic sequence is controlled by buffer clamps set to the plate edge which contain limit switches. Motors and control apparatus are placed on separate foundations and connected to the vibration isolated machine by shafts with flexible couplings. Due to its great weight, the work table is divided into a bottom and top component; the bottom component is guided along scraped flat cast iron guides which ensure horizontal and vertical parallelism; the top component is allowed a small free displacement relative to the bottom, and rests on three balls in prismatic

Card 2/3

70

TITLE: An Automatic Ruling Machine for Printing Screen Gratings.
(Avtomaticheskaya mashina dlya naneseniya deleniya na rastrah)

guides. Each component has its own lead screw. The bottom screw is ordinary, the top screw fulfills super-precision requirements and has a correcting device in the form of a differential screw. The straightness of the line is ensured by the combination of load carrying roller guides and correcting sliding guides. The text contains 1 photograph and 2 sets of diagrams.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 3/3

VOLOSOV, Sergey Sergeyevich; dots., kand. tekhn. nauk; ~~DRAUDIN-KRYLENKO,~~
A.T., inzh., retsenzent; VOLODIN, Ye.I., inzh., red.; ~~EL'KIND,~~
V.D., tekhn. red.; UVAROVA, A.F., tekhn. red.

[Automatic control of the precision of dimensions during grinding]
Avtomaticheskoe obespechenie tochnosti razmerov pri shlifovanii.
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958.
117 p. (MIRA 11:10)

(Grinding and polishing)

SEMENOVA, L.M.; DRAUDIN, A.T.

Semiautomatic devices for over-all dual checking of gear wheels.
Stan. i instr. 29 no.7:23-24 J1 '58. (MIRA 11:9)
(Gearing--Testing)

PHASE I BOOK EXPLOITATION SOV/5839

Berklayd, I. M., V. S. Vikhman, A. T. Draudin, N. Ye. Kopanevich,
G. I. Ovcharenko, Z. L. Tubenshiyak, G. V. Chasovnikov and Ya. M. Tseytlin

Kontrol' nye avtomaty ([Dimensional-] Control Automatics) Moscow, Mashgiz,
1961. 193 p. (Series: Progressivnyye sredstva kontrolya razmerov v mashino-
stroyeni) Errata slip inserted. 4500 copies printed.

Eds. of Series: B. S. Bayburov, M. I. Kochenov, and D. D. Malyy; Scientific
Ed.: V. S. Vikhman, Doctor of Technical Sciences; Ed. of Publishing House:
L. P. Stroganov, Engineer; Tech. Ed.: R. I. Dobritsyna; Managing Ed. for
Literature on Means of Automation and Instrument Construction: N. V. Pokrov-
skiy, Engineer.

PURPOSE: This book is intended for designers and technical personnel in machine
plants.

Card 1/1

✓

Control Automatics

SOV/5839

COVERAGE: The book contains information on the most important Soviet late-model automatics for the inspection, sorting, and automatic control of machine parts according to their geometric parameters. The book is part of a series devoted to modern means of dimensional control and was recommended by the Commission on the Introduction of Advanced Control Methods and Means in the Machine Industry of the State Scientific-Technological Committee of the Council of Ministers of the USSR. Attention is given to the construction, operation, and specifications of a number of dimensional-control automatics for various purposes. Photographs and layout diagrams are included. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Introduction	5
Ch. I. General-Purpose [Dimensional-] Control Automatics	10
Card 2/3	

BALAKSHIN, O.B., kand. tekhn. nauk; BYKHOVSKIY, M.L., prof., doktor tekhn. nauk; VOLODIN, Ye.I., kand. tekhn. nauk; GRIGOR'YEV, I.A., kand. tekhn.nauk; DRAUDIN-KRYLENKO, A.T., inzh.; IVANOV, A.G., kand. tekhn.nauk; KOZLOV, M.P., kand. tekhn. nauk; KOROTKOV, V.P., prof.; KOCHENOV, M.I., kand. tekhn.nauk; KUTAY, A.K., kand. tekhn. nauk; MARKOV N.N.,kand. tekhn. nauk; PALEY, M.A., inzh.; RAYEMAN, N.S., kand. tekhn.nauk; ROSTOVYKH, A.Ya., kand. tekhn. nauk; RUMYANTSEV, A.V., kand. tekhn.nauk; SARKIN, I.G., prof.; SMIRNOV, A.S., inzh.; TAYTS, B.A., prof., doktor tekhn. nauk; YAKUSHEV, A.I., prof., doktor tekhn. nauk; NESTEROV, V.D., inzh., nauchnyy red.; CHUDOV, V.A., inzh., nauchnyy red.; GAVRILOV, A.N., doktor tekhn.nauk, prof., red.; BLAGOSKLONOVA, N.Yu., inzh., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Manufacture of instruments and means of automatic control: a manual in five volumes] Priborostroenie i sredstva avtomatiki; spravochnik v piati tomakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.1. [Interchangeability and engineering measurements] Vzaimozameniaemost' i tekhnicheskie izmereniia. 1963. 568 p. (MIRA 16:8)

(Electronic measurements) (Automatic control)

DRAUDIN, A.T., inzh.; KIRYUSHOV, A.Ya.

Automatic monitors. Mekh.i avtom.proizv. 18 no.2:24-27 F '64.
(MIRA 17:4)

DRAUDINS, Teodors—KUDUMA, A., red.; MIRONOV, A., tekhn.red.

[Combat history of the Latvian Riflemen, 1917-1920] Latviesu
strelnieku cinu cels, 1917-1920. Riga, Latvijas Valsts
izdevnieciba, 1961. 150 p. (MIRA 15:2)
(Latvia--Army) (Russia--Revolution, 1917-1921)

DANYS, J., med.m. dr.; SKUCAITE, O., doc.; DANIENE, St.; OSTRAUSKIENE, S.;
DRAUGELIENE, D.; MILASAUSKIENE, M.; LUKOSEVICIUTE, A.;
KATILIENE, G.; KABASINSKIENE, G.

The perspectives in further rheumatism control. Sveik. apsaug.
8 no.12:32-35 D'63.

1. Kauno Valst. medicinos institutas. (rektorius - prof.
Z. Januskievicius) ir Respublikine Kauno klinine ligonine
(vyr.gyd. - doc. P. Jasinskas).

*

DRAUGIR, D.A.

Vliianie metoda i rezhima mekhanicheskoi obrabotki poverkhosti na predel ustalosti stali. Vestn. Mash., 1950, no. 4, p. 15-19.

Includes bibliography.

Influence of the Methods and conditions of surface machining upon the fatigue point of steel.

DLC: TM4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library Congress, 1953.

DRAULESCU, C., prof.; JULEAN, I.

Precipitation of uranyl salts with aromatic amines. Studii chim
Timisoara 6 no.1/2:51-57 Ja-Je '60. (EEAI 10:3)

1. Academia R.P.R., membru corespondent al Academiei Republicii
Populare Romine; Comitetul de redactie, Studii si cercetari stiinte
chimice, redactor responsabil (for Dragulescu). 2. Comitetul de
redactie, Studii si cercetari stiinte chimie, secretar stiintific al
Comitetului de redactie (for Julean)
(Uranyl salts) (Aromatic compounds) (Amines)

DRAUS, J.

Measurement of vibrations of spherical resonators. Cs cas fys 12
no. 2:139-143 '62.

1. Vyzkumny ustav pro mineraly, Turnov.

SOV/94-58-8-8/22

AUTHORS: Tarasevich, N. I., Ioffe, M. M., Popov, S.M.,
Veklich, M. I., Drausal', A. V., Dikovskiy, A.M.,
Merkulov, V. G. and Arno, B. E.

TITLE: Increasing the Output of Hood-type Electric Furnaces
with Economy of Electric Power (Ekonomiya elektroenergii
i uvelicheniye proizvoditel'nosti kolpakovykh
elektropechey)

PERIODICAL: Promyshlennaya Energetika, 1958, Nr 3, pp 20-21 (USSR)

ABSTRACT: This suggestion was awarded third prize in an All-Union Power Economy Competition. In the manufacture of transformer steel high temperature annealing is carried out under vacuum at a temperature of 1180°C. This operation is carried out in special vacuum hood-type electric furnaces. The sheet steel in the furnace is protected by muffles which in their turn are covered by the hood which contains electric heaters and water-cooled vacuum seal. The annealing period includes a cooling time which reduces the output of the furnace and increases the power output because the heat in the hood is wasted. The furnaces were reconstructed in such a way that when the heating period is over the hot hood is quickly.

Card 1/2

SOV/94-58-8-8/22
Increasing the Output of Hood-type Electric Furnaces with Economy
of Electric Power

replaced by a cold one and transferred to the next furnace
that requires heating. Inert gas is used to protect the
sheet steel during the short period in which the vacuum
is broken. Cooling is now more rapid than before and
less power is used.

Card 2/2

POLAND/Human and Animal Physiology - Physiology of Work and Sport.

T-12 /

Abs Jour : Ref Zhur - Biol., No 7, 1958, 32297
Author : Dutkiewicz, J.S., Fiec, L., Drause, M., Strzoda, L.
Inst : -
Title : Further Study of Changes in the Organism of a Man Spending Time in a Ward in a Dry Hot Conditions.
Orig Pub : Acta physiol. polon., 1956, 7, No 2, 159-168

Abstract : In 62 mining rescuers placed for 2 hours in a chamber with little moisture and a temperature of 52-58°, an increase was found of the pulse rate with an increase of the environmental temperature to 55°, as well as a drop of the arterial pressure with no change of the pulse rate. Regular changes in the venal pressure and in the per-minute requirement of O₂ were not observed. Observation of 330 rescuers during their stay in a chamber with a temperature of 39-47° showed different, in many ways individual,

Card 1/2

- 159 -

POLAND/Human and Animal Physiology - Physiology of Work and
Sport.

T-12

Abs Jour : Ref Zhur - Biol., No 7, 1958, 32297

variations in the functions of the CNS.

Card 2/2

POLAND/Human and Animal Physiology - Physiology of Work and Sport.

T-12

Abs Jour : Ref Zhur - Biol., No 7, 1958, 32298

Author : Dutkiewicz, J.S., Giec. L., Drause, M., Strzoda, L., Zygmunt, M.

Inst : -

Title : Changes in Human Organism During Work in Conditions of Dry Heat in an Insulated Gasmask and Without It.

Orig Pub : Acta physiol. polon., 1956, 7, No 2, 169-184.

Abstract : In 130 healthy mining rescuers in a chamber with a temperature of 39-47° and low humidity and with radiation and movement of air, the hemodynamic was studied both at rest and during performance of standard physical work in the course of 2 hours. In 49 rescuers working without gasmasks, there was noted an average a drop in the weight of 1.45 ± 0.05 kg, rise of oral temperature to $37.56 \pm 0.07^\circ$, armpit temperature $37.5^\circ \pm 0.08^\circ$, rectal $38.1 \pm 0.11^\circ$.

Card 1/2

- 160 -

POLAND/Human and Animal Physiology - Physiology of Work and Sport.

T-12

- Abs Jour : Ref Zhur - Biol., No 7, 1958, 32298

The O₂-enriched air which the tested rescuers breathed in the insulated gasmask exerted a normal influence on the organism of the workers.

Card 2/2

DAVAT, I.

The Binding (in hard rock) of Drilling Tools. Petrol Si Gaze (Petroleum and Gases), #18: Jan 55

DRAVAT, I.

"Adhesion of the boring rig. p. 8. (PETROL SI GASE, Vol. 6, no. 1, Jan. 1955. Bucuresti, Rumania).

SO: Monthly List of East European Accessions, (EEAL), LC.
Vol. 4, No. 5, May 1955, Uncl.

DRAVAT, I., ing.

Preventing technical accidents caused by tubular materials at the Tirgu Jiu Drilling Trust. Petrol se gaze 13 no.3:109-114 Mr '62

1. Trustul de foraj, Tirgu Jiu.

DRAVAT, I., ing.

Manifestations in drilling wells. Petrol si gaze 13 no.10:441-446
0 '62.

DRAVAT, I., ing.

On the wear of cone bits. Petrol si gaze 15 no. 4:168-174
Ap '64.

BRATCHEVA, A. I., AND GALANOVA, N. V.

"Mechanism of Allergy to Bacterial Exotoxins," ZHMEI, 4-5, 1943

DRAVIC, R.

Increase of capacity and transportation services. Medun
transp 8 no.1:34-37 Ja '62.

1967, 1.

Transposition on the Danube River, and prospects after the construction
of Iron Gate dam. Medon transp 10 no. 3:66-67 LR 102.

S/058/62/000/012/025/048
A160/A101

AUTHOR: Dravin, A. B.

TITLE: The process of exposing facsimile copies in electrophotography

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1962, 61, abstract 120566
("Sb. nauchn. rabot. Vses. n.-i. in-t poligr. prom-sti", no. 13,
1961, 41 - 47)

TEXT: A method is proposed for exposing by the magnitudes of the initial and final potentials of the electrophotolayer, securing the necessary exposure duration. A method is given for determining the initial and final potentials in relation to the purpose of the electrophotographic pictures and to the characteristics of the development process. Proposed is an automatic method of carrying out the exposure process with the help of a device on the basis of a dynamic electrometer. There are 14 references.

[Abstracter's note: Complete translation]

Card 1/1

DRAVIN, A.B.

Determining the sensitivity of the electrophotographic process of
producing line images. NTI no.11:41-44 '64.

(MIRA 18:1)

ACC NR: AP6033447

SOURCE CODE: UR/0413/66/000/018/0021/0022

INVENTOR: Dravniyeks, E. M.

ORG: None

TITLE: A device for manufacturing and assembling parts from metal band. Class 7, No. 185828 [announced by the Riga Radio Plant im. A. S. Popov (Rizhskiy radiozavod)]

SOURCE: Izobret prom obraz tov zn, no. 18, 1966, 21-22

TOPIC TAGS: metal bending, bending machine, electric switch

ABSTRACT: This Author's Certificate introduces: 1. A device for manufacturing and assembling parts from metal band. The unit contains a stationary lower plate on which a movable mandrel is mounted. Connected to the lower plate by guide columns is a movable upper plate on which are located a bending jig and a cutoff punch. The device is designed for making contact lugs with precision alignment with respect to the openings in the panel being assembled with subsequent pressing into these openings. The unit is equipped with a mechanism for centering the openings with respect to the curved lug made in the form of a movable carriage mounted beneath the lower plate and connected by a control system to the bending jig. The jig consists of two spring sections which are mounted together with the cutoff punch on a holder which is fastened to the upper plate. This holder carries a crimp rod between the jig sections

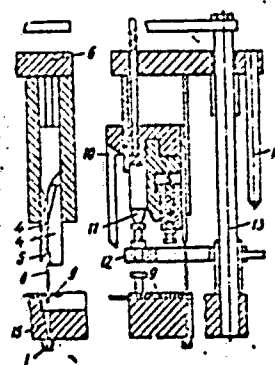
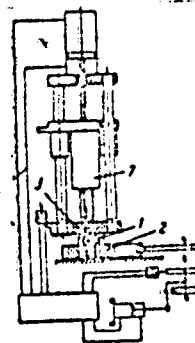
UDC: 621.981.1

Cord 1/2

ACC NR: AP6033447

for pressing the bent lug into the panel. 2. A modification of this device in which the mandrel may be rotated by a wedge fastened to the holder. The holder interacts through a spherical support with a lever mounted on the guide column and rotated by a wedge rod mounted on the upper plate of the device. 3. A modification of this device in which the ends of the lug are brought together to a predetermined size by a draw plate with a wedge-shaped working cross section on the lower plate of the unit.

1--panel; 2--carriage; 3--lower plate; 4--bending jig;
5--punch; 6--upper plate; 7--holder; 8--crimp rod;
9--mandrel; 10--wedge; 11--spherical support; 12--lever;
13--guide column; 14--wedge rod; 15--draw plate



SUB CODE: 13/ SUBM DATE: 07Jan65

Card 2/2

69087

S/120/60/000/01/028/051
E/192/E382

9,2560

AUTHOR: Dravskikh, A.F.

TITLE: Direct-current Stabilizer for the Tube Heater Supply

PERIODICAL: Pribery i tekhnika eksperimenta, 1960, Nr 1,
pp 100 - 101 (USSR)

ABSTRACT: A detailed circuit diagram of the stabilizer is shown in Figure 1. The main control element is the first transistor, type P4B (see the figure). The reference voltage is provided by a small four-cell battery. The direct current amplifier is based on 4 pentodes. Small batteries are used as the coupling elements between the pentodes. The batteries do not supply any current since the tubes operate at negative grid voltages. The heater, screen and anode circuits of the first three tubes are supplied from the output voltage of the stabilizer. Since the full load of the stabilizer results in base current of the order of several hundred mA in the control transistor, this cannot be provided by a vacuum tube. Consequently, the current to be controlled by the first tube is reduced by employing three additional transistors which are connected

Card1/2

69087

S/120/60/000/01/028/951

E192/E382

Direct-current Stabilizer for the Tube Heater Supply

as emitter followers. The heater of the first tube is also supplied from the output voltage but its anode is fed from the unstabilized side of the device. The stabilizer has the following characteristics: output voltage 6.3 V; load current 1.2 to 4.5 A; output hum 0.1 to 0.2 mV; heating time of 10 to 15 min for the load current of 4.5 A. For the mains variation from 155 to 250 V the output voltage of the stabilizer varies from $\pm 5 \times 10^{-5}$. The load current change of 0.6 A changes the output voltage by less than 10^{-5} . The author expresses his gratitude to A.P. Molchanov for supplying the transistors. There are 2 figures and 3 Soviet references.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya AN SSSR
(The Main Astronomical Observatory of the Ac.Sc., USSR)

SUBMITTED: January 17, 1959

Card 2/2

3,1720(1041,1126,1127)
6.9417

20981
S/058/61/000/004/036/042
A001/A101

AUTHORS: Wang Shou-kuan, Kuo Jou-hsiung, Dravskikh, A.P., Kushnir, V.P.,
Molchanov, A.P., Tavastsherna, K.N., Wu Hual-wei, Huang Wei-k'ung,
Ch'en Pang-yun, Yang Chien

TITLE: The observation of the solar annular eclipse of April 19, 1958, at
the 3.2-cm wavelength

PERIODICAL: Referativnyy zhurnal, Fizika, no 4, 1961, 416, abstract 4Zh594
("Solnechnyye dannyye", 1960, no 4, 69 - 72)

TEXT: The authors describe the methods and results of measuring the
solar-radio emission at the 3.2-cm wavelength during the annular eclipse of April
19, 1958. The following measurements were carried out simultaneously: radio
emission flux, position of the effective radio emission center relative to the
optical center, and "ellipticity" of radio emission distribution which turned out
to be far less than 10%. The value of residual flux was obtained (without local
sources - 25% of that from the quiet Sun). The fluxes and brightness temperatures
of two local sources were estimated. Some peculiarities in the displacement of

Card 1/2

20981

The observation of the solar annular eclipse ...

S/058/61/000/004/036/042
A001/A101

the effective radio emission center, which took place in the course of the eclipse, are explained by the presence of local sources, including one local source which was behind the disk edge in the eclipse day. Considerations are presented as to identification of this source.

A. S.

[Abstracter's note: Complete translation.]

Card 2/2

3.1720

S/058/61/000/002/015/018
A001/A001

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 2, p. 405, # 2Zh509

AUTHOR: Dravskikh, A.P.

TITLE: Spectral Features of Development of Solar Radio Emission Bursts at Centimeter Wavelengths

PERIODICAL: "Izv. Gl. astron. observ. v Pulkove", 1960, Vol. 21, No. 5, pp. 128-139 (Engl. summary)

TEXT: The author describes a method of observation of inclinations of solar radio burst spectra with the aid of a radiometer having two commutating heterodynes tuned to adjacent frequencies of the 3-cm band. Of 50 bursts observed, 43 were processed. 33 of them show changes in the inclination of the burst spectrum in the process of its development with respect to the spectrum of the "quiet" Sun. States with negative spectrum inclination prevail in the great majority of the bursts, i.e., low frequencies predominate. Records of nine bursts and corresponding inclinations of their spectra are presented.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

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S/194/000/002/068/096
D290/D301

AUTHOR: Dravskikh, A. F.

TITLE: Radioemission spectra of solar flares

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika,
no. 2, 1962, 44, abstract 2Zh293 (Solnechnyye dannyye,
1961, no. 1, 61-65)

TEXT: The spectra of the radioemission from solar flares was studied in the vicinity of the hydrogen line at 9850 Mc/s; this line corresponds to the $2^2S_{\frac{1}{2}} - 2^2P_{\frac{3}{2}}$ C transition. The measurements were

made at the Pulkovsk observatory; a two-channel spectrograph (9850 and 9850 Mc/s) was used from December 1958 onwards, and a three-channel spectrograph, with the outer channels at + 500 or + 170 Mc/s from the line frequency, was used from November 1959. The sum of the channel outputs, the mean difference between the middle and outer channels, and the difference between the outer channels, were

Card 1/2

Radioemission spectra of ...

S/194/62/000/002/068/096
D290/D301

all measured. Twelve flares had a residual intensity of 0.9 or 1.1 at the line frequency. The spectral flux density in the 3 cm band varies as ν^{-n} , in which ν is the frequency and n ranges from +4 or +2 up to -7, -10, or more; for self-propagated flares, n is negative. The spectra of the flares change as they grow; on this basis they can be divided into four groups. The spectra of most flares are non-thermal, and can be attributed to the interaction of relativistic electrons with magnetic fields. The difference of the residual intensity of several flares from unity indicates the presence of the 3.04 cm excited hydrogen line; this line does not occur in the integrated emission from the sun, within a limit of error of 1%. [Abstracter's note: Complete translation.]

Card 2/2

40249
S/169/62/000/007/129/149
D228/D307

3.1720

AUTHORS: Dravskikh, Z. V. and Dravskikh, A. F.

TITLE: Results of the observation of the exceptional solar eclipse of February 15, 1961, on the wave 3.28 cm (Preliminary results)

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 7, abstract 7G43 (Solnechnyye dannyye, no. 10, 1961 (1962), 63)

TEXT: The observations were conducted at Pulkovo on a radiometer with a mirror diameter of 3 m, which recorded nonpolarized and circularly polarized flows of radio emission. [Abstracter's note: Complete translation.]

X

Card 1/1

h0217
S/214/62/000/004/001/004
IO42/I246

3,1720

AUTHOR: Dravskikh, A.F.

TITLE: Statistical regularities in spectra of solar radio-burst and the possible radiation mechanisms

SOURCE: Solnechnyye dannyye, no.4, 1962, 58-63

TEXT: Statistical analysis of spectral densities as a function of frequency ($I = I_0 \nu^n$) for solar bursts carried out for two and three frequencies near $\nu = 9885$ Mc (excited hydrogen) shows that spectra with $n = -0.75 \pm 0.25$ are characteristic of 73% of bursts; this n-spectrum appears in 28% of the total burst time (highest life-time for any specific n); spectra with $-1.45 \leq n \leq +0.45$ are observed during 58% of the total time, and spectra with

Card 1/2

S/214/62/000/004/001/004
I042/I246

Statistical regularities....

$-4.0 \leq n \leq +2.5$ during 96% of the time; spectra with negative n appear in 71% of burst time. The most characteristic $n = -0.75$ spectrum of solar radiobursts at $\lambda \sim 3$ cm cannot be explained by thermal radiation in an isotropic plasma; it may be due to thermal radiation in a magnetoactive plasma in $H > 1000$ gauss, or to synchrotronic radiation in $H < 1000$ gauss. The $\lambda = 3.04$ cm line of excited hydrogen points to nonequilibrium distribution of $2^2P_{3/2}$ and $2^2S_{1/2}$ electrons and thus to existence of cold matter in bursts or along the path of radiowave propagation. There are 3 figures.

Card 2/2

DRAVSKIKH, A. P.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Main Astronomical Observatory in 1962:

"Investigation of the Spectral Characteristics of Surges of Solar Radio Emission in the Centimeter Wave Range."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

DRAVSKIKH, A.F.

Statistical spectral characteristics of bursts of solar radio emission in the microwave range and some possible mechanisms of radio emission. Izv. GAO 23 no.3:40-78 '64.

(MIRA 17:11)

DRAVSKIKH, A.F.

New synchronous detector. Izv. GAO 23 no.3:238-242 '64.

New clock mechanism for guiding a radio telescope. Ibid.:
245-248 '64.
(MIRA 17:11)

DRAVSKIKH, A.F.; NIKOLAYEV, L.A.; UMETSKIY, V.N.; TARAIENKO, V.G.

Powerful high-stability source of low voltage. Izv. GAO 23
no.3:243-244 '64.
(MIRA 17:11)

L 1982-66 EWT(1)/FBD G4/45-2
ACCESSION NR: AP5018742

UR/0020/65/163/002/0332/0334

AUTHOR: Dravskikh, A. F.; Dravskikh, Z. V.; Koibasov, V. A.; Misezhnikov, G. B.; Nikulin, D. Ye.; Shteynshleyger, V. B.

TITLE: Investigation of the radio line of excited hydrogen at 5 cm wavelength, using a quantum paramagnetic amplifier

SOURCE: AN SSSR. Doklady, v. 163, no. 2, 1965, 332-334

TOPIC TAGS: radio astronomy, ^{12.57}galaxy, galactic nebula, line intensity, line width, hydrogen line, quantum device

ABSTRACT: Since stars are more likely to have excited hydrogen than neutral hydrogen, a study of the excited-hydrogen radio lines can yield information on the structure of the galaxy. The authors describe experiments made in 1964, which confirmed the presence of such a line, plotting its profile in the Omega nebula. This was made possible by using a traveling-wave quantum paramagnetic amplifier for 5-cm wavelength, operating at 4.2K, with gain of 25 db and bandwidth of 6 Mc. The radio-spectrograph used for the observation was a modulation-type radiometer with triple frequency conversion and contour analyzer. Two measurements were made (in May and July). In the first the spectrum from the nebula was compared with the radiation spectrum of the earth's atmosphere and analyzed in the 5.5-Mc band, and in the

Card 1/2

L 1938-66

ACCESSION NR: AP5018742

160
second the comparison was with the radiation from A-Cygni and the analysis in the 5763 Mc band. Similar results were obtained in both cases. A pronounced increase in the radiation from the nebula was observed in the 5763 Mc region. The radio-intensity at the maximum is estimated at $3.8 \pm 0.5\%$ of the continuous spectrum, and the width at 50% intensity is 1.2 ± 0.1 Mc. The effect of the earth's magnetic field and the sun on the line position was also observed. The authors thank N. Iuriyakiy, T. V. Kozlovskiy, I. A. Kozlovskiy, Ye. A. Rezen-kiy, V. P. Kozlovskiy, and V. A. Kozlovskiy for their discussions and assistance. This report was presented by V. A. Kozlovskiy. The authors are grateful to the following figures.

ASSOCIATION: none

EXEMPTED: 24Dec64

NR REF SOV: 004

ENCL: 00

SUB CODE: AA

OTHER: 001

Card 2/2

ACC NR: AP7008799

SOURCE CODE: UR/0033/67/044/001/0035/0041

AUTHOR: Dravskikh, A. F.; Dravskikh, Z. V.

ORG: Main Astronomical Observatory, Academy of Sciences, SSSR (Glavnaya astronomicheskaya observatoriya akademii nauk SSSR)

TITLE: The detection and investigation of the radio-frequency spectrum line of excited hydrogen at 5 cm ($n_{105} \rightarrow n_{104}$) in the radiation of some galactic nebutal

SOURCE: Astronomicheskii zhurnal, v. 44, no. 1, 1967, 35-41

TOPIC TAGS: radio astronomy, radio emission, galactic spectrum, spectral line, hydrogen, galactic radiation, galactic nebula

ABSTRACT: Results are presented of observations of the radio-frequency spectral line of excited hydrogen at 5 cm developed during the transition between the 105 and 104 levels (frequency 5762.9 MHz). Measurements were carried out with a relatively simple spectrograph with a sensitivity of about 1°K, a time constant of 1 sec, and a band pass of 20 MHz. To make further observations of the radio-frequency spectral line, the new spectrograph was developed with a maser at its input. The sensitivity of this equipment was 0.07°K at a time constant of 1 sec and a band pass of 20 MHz. The line profiles of the Horseshoe Nebula, Orion Nebula, and in the direction of the galactic center were

Card 1/2

UDC: 523.164.43

ACC NR: AP7008799

determined and analyzed. The intensity of the line for Orion at the maximum is $6 \pm 1\%$ of the continuous spectrum intensity and its half-width is $490 \pm 20\text{KHz}$. The line intensity for Horseshoe Nebula at the maximum is equal to $3.9 \pm 0.5\%$ of the continuous spectrum intensity and its half-width is $900 \pm 50\text{KHz}$. The relative intensity of the line for the galactic center at the maximum is equal to $1.0 \pm 0.2\%$ and the half-width is equal to $270 \pm 70\text{KHz}$. The kinetic temperatures of the Horseshoe Nebula, Orion Nebulae, and the galactic center are 5200, 6400, and 4300°K, respectively. It was concluded that the radiation in the line in the direction of the galactic center does not originate from the central part. Orig. art. has: 7 figures and 3 tables. [CS]

SUB CODE: 03/ SUBM DATE: 23Feb66/ ORIG REF: 010/ OTH REF: 003

Card 2/2

40249
S/169/62/000/007/129/149
D228/D307

3,1720

AUTHORS: Dravskikh, Z. V. and Dravskikh, A. F.

TITLE: Results of the observation of the exceptional solar eclipse of February 15, 1961, on the wave 3.28 cm (Preliminary results)

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 7, abstract 7G43 (Solnechnyye dannyye, no. 10, 1961 (1962), 63)

TEXT: The observations were conducted at Pulkovo on a radiometer with a mirror diameter of 3 m, which recorded nonpolarized and circularly polarized flows of radio emission. [Abstracter's note: Complete translation.]

Card 1/1

ACCESSION NR: AT3008538

S/2984/63/000/000/0023/0027

AUTHORS: Belyayev, Yu. A.; Gerasimova, T. S.; Dravskikh, Z. V.; Mikhel'son, N. N.;
Sumin, V. S.; Shkutova, N. A.; Shumakher, A. V.

TITLE: Control system for the RM-700 telescope

SOURCE: Novaya tekhnika v astronomii; materialy* soveshch. Komissii
priborostroyen. pri Astronom. soveta AN SSSR, Moskva, 18-20 apr. 1961 g. Moscow,
Izd-vo AN SSSR, 1963, 23-27

TOPIC TAGS: control system, automatic control, RM 700 telescope, telescope, EISUM
digital control machine

ABSTRACT: A 700-mm reflector telescope (called the RM-700) has just been built at
the Pulkovskaya observatoriya (Pulkovo Observatory). It will be equipped with a
double control system. One aspect is a semiautomatic control from a key or with
one of two panels operating by semiautomatic control. The position of the tele-
scope will be computed on this panel, each coordinate having a double-metering
selsyn connection operating as an indicator. The hour mechanism will be a synchro-
nous motor, supplied by a quartz-crystal clock. The second part of the system is

Card 1/2

ACCESSION NR: AT3008538

automatic control by means of a digital electronic control device (ETsUM). This device has been described by Yu. A. Belyayev (1961, Izv. GAO AN SSSR, 169). It operates with a binary code of sidereal time, computed in angular scale from the panel. This involves the use of a quartz-crystal clock running on sidereal time, a frequency divider and power amplifier, a frequency converter, and a cumulative adder. The operation of the parts is described in considerable detail. "B. N. Batanov (deceased), Yu. N. Gell', and A. V. Korolev participated in this work." Orig. art. has: 7 figures.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya AN SSSR (Main Astronomical Observatory AN SSSR)

SUBMITTED: 00

DATE ACQ: 16Oct63

ENCL: 00

SUB CODE: AA, IE

NO REF SOV: 004

OTHER: 000

Card 2/2

DRAVSKIKH, A.F.; DRAVSKIKH, Z.V.; KOLBASOV, V.A.;
MISEZHNIKOV, G.S.; NIKULIN, D.Ye.; SHTEYNHLEYGER, V.B.

Study of the radio line of excited hydrogen at a wavelength of 5 cm.
using a quantum paramagnetic amplifier. Dokl. AN SSSR 163 no.2:332-
334 J1 '65. (MIRA 18:7)

1. Submitted December 31, 1964.

KOZLOV, I.I.; DRAYCHIK, I.I., inzhener, laureat Stalinskoy premii, retsen-
zent; KASSATSIK, M.S., inzhener, redaktor.

[Leaf and coil springs of railroad rolling stock; technology of manu-
facture and repair] Ressory i prushiny podvishnogo sostava zheleznoro-
dorozhnogo transporta; tekhnologiya izgotovleniya i remonta. Moskva,
Gos. nauchno-tekhn. izd-vo mashinostroit. i sudost. lit-ry, 1954.

131 p.

(Springs (Mechanism))

(MLRA 7:7)

DADYKO, S.R.; ~~DRAYCHIK, I.I.~~; KAZANSKIY, G.A., inzhener, laureat Stalinskoy
premi, ~~Pechenkin~~; VOSKRESENSKIY, N.N., inzhener, redaktor;
SOKOLOVA, T.P., tekhnicheskij redaktor

[Railroad car construction; handbook] Vagonostroenie; spravochnik
posobie. Izd. 2-e, dop. i perer. Moskva, Gos. nauchno-tekhn. izd-vo
mashinostroit. lit-ry, 1954. 564 p.
(Railroads--Cars) (MIRA 8:4)

DRAYCHIK, I.I.; KOLESNICHENKO, V.O.

New types of motorcar sections. Zhel.dor.transp.39 no.1:20-23 Ja
'57. (MLRA 10:2)

1. Glavnyy konstruktor Glavvagona Ministerstva transportnogo mashinostroyeniya (for Draychik). 2. Glavnyy konstruktor Rishskogo vagonostroitel'nogo zavoda (for Kolesnichenko).
(Railroad motorcars)

DRAYCHIK, I.I., insh.

New freight cars used in mining and metallurgical enterprises.
Bul. TSNIIICEM no.3:50-54 '58. (MIRA 11:5)
(Railroad, Industrial--Freight cars)

DRAYCHIK, I.I.; DEVIATKOV, V.F.

Introducing the use of roller bearings for rolling stock.
Zhel.dor.transp. 42 no.4:44-49 Ap '60. (MIRA 13:7)

1. Glavnyy spetsialist Gosudarstvennogo nauchno-tekhnicheskogo komiteta Soveta Ministrov SSSR (for Draychik). 2. Rukovoditel' sektora Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta (for Devyatkov).
(Railroads--Rolling stock)
(Roller bearings)

DRAYDEN, I.G.S. [Dryden, I.G.C.]

Discussing S.Sarkar's article "Coking properties of coals."
Koks i khim. no.12:56 '63. (MIRA 17:1)

GOROKHOV, N.A.; DRAYGIN, Yu.A.; FEDOSEYEV, L.I.

Radio frequency radiation from the sun on the wave $\lambda = 1.8 \text{ mm}$.
Izv. vys. ucheb. zav.; radiofiz. 5 no.2:413 '62. (MIRA 15:5)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri
Gor'kovskom universitete.
(Solar radiation)

DRAYGOR, D. A.

26382 Uprochneniye poverkhnosti metalla pri mekhaniche obrabotke. Sbornik
trudov in-ta stroit. Mekhaniki (Akad. nauk ukr. ssp), No. 11, 1949, s. 115-27
Bibliogr: 7 nazu.

SO: LETOPIS' NO. 35, 1949

DRAYGOR, D.A.

Relationship between the wear resistance of steel and physical
conditions of machined surfaces. Sbor. trud. Inst. stroi. mekh.
AN URSR no.15:128-141 '51. (MIRA 11:4)
(Steel--Metallography)

DRAYHOR, D.A.; BELYANKIN, F.P., diyannyi ohlen.

Resistance to wear and fatigue strength of steel depending on mechanical and heat treatment. Dop.AN URSS no.4:264-269 '51. (MIRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR (for Belyankin). 2. Instytut budivel'noyi mekhaniky Akademiyi nauk Ukrayins'koyi RSR (for Drayhor).
(Metals--Fatigue) (Steel)

DRAYGOR, D. D.

KOFMAN, A.M.; DRAYGOR, D.A., dotsent, kandidat tekhnicheskikh nauk, redaktor; FRITSKER, G.S., tekhnicheskiiy redaktor

[Manual for automobile drivers] Pamiatka voditelia avtomovilia.

Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1952.

125 p. [Microfilm]

(MLRA 10:4)

(Automobiles)

HROZIN, B.D., ohlen-korrespondent; DRAYHOR, D.A.; SEMYROH-ORLYK, V.M.

Investigation of cause of lowered wear resistance in the crankshafts of S-80 tractors. Dop.AN URSSR no.4:334-341 '52. (MLRA 6:10)

1. Akademiya nauk Ukrayins'koyi RSR (for Hrozin).
2. Instytut budivel'noyi mekhaniky Akademiyi nauk Ukrayins'koyi RSR.
(Crankshafts and crankshafts) (Tractors)

DRAYHOR, D.A.; BYELYANKIN, F.P., diysnyy chlen.

Fatigue limit of steel under simultaneous action of friction and repeated variable loading. Dop. AN URSR no. 6:479-482 '52. (MLRA 6:10)

1. Instytut budivel'noyi mekhaniky Akademiya nauk Ukrayins'koyi RSR (for Drayhor).
2. Akademiya nauk Ukrayins'koyi RSR (for Byelyankin).
(Steel) (Metals—Fatigue)

DRAYGOR, D. A.

PA 245T28

USSR/Metallurgy - Steel, Machining Jan 53

"Nature of Structural Changes in Surface Layers of Hardened Steel During Machining," D. A. Draygor

"Dopovid1 Ak Nauk Ukrain's'koy RSR" No 1, pp 63-67

Studies phenomenon of increased surface hardness of ShKh15 (ball-bearing chromium) steel after high-speed turning, concluding that surface layer of workpiece undergoes hardening of

245T28

peculiar kind under conditions of above-critical temps and high pressures caused by cutting and force. Investigates effect of quenching and tempering temps on changes in structure and hardness of machined surface. Submitted by F. P. Belyankin, Active Mem Acad Sci Ukrainian SSR.

245T28

BRAUN, M.P.; GROZIN, B.D., professor, doktor tekhnicheskikh nauk, retsentsent; DRAYGOR, D.A., kandidat tekhnicheskikh nauk, redaktor; RUDENKO, I.A., tekhnicheskiiy redaktor.

[Properties of structural steel in large sections] Svoistva konstruktsionnykh stalei v krupnykh secheniyakh. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry. 1954. 65 p.
(Steel, Structural)
(MLRA 7:8)

DRAYGOR, D.A.

Second scientific and technical conference in Kiev on increasing
wear resistance and life of machines. Visnyk AN USSR 25 no.11:
62-65 N '54. (MIRA 8:2)
(Kiev--Mechanical engineering--Congresses)

DRAYCOR, D.A.

Durability of steel depending on surface pressure from friction. Dop.
AN URSR no.2:139-142 '55. (MIRA 8:11)

1. Institut budivel'nei mekhaniki Akademii nauk URSR. Predstaviv
diysniy chlen Akademii nauk URSR F.P.Belyankin
(Steel) (Strength of materials)

RAY GORDON
RAYGON, D.A.

Effect of an oxide film on the strength of steel subjected to repeated variable loading. Dop. AN URSR no.3:238-240 '55.
(MLRA 8:11)

1. Institut budivel'noy mekhaniki Akademii nauk URSR. Predstaviv
diysniy chlen Akademii nauk URSR P.P.Belyankin
(Steel--Testing) (Metallic films)

DRAYGOR, D. A.

Name: DRAYGOR, D. A.

Dissertation: The wear resistance and fatigue strength of steel in relation to the conditions of working and the process of friction

Degree: Doc Tech Sci

Defended at
~~Publication~~ Affiliation: Acad Sci Ukrainian SSR, Inst of Structural Mechanics

Publication
~~Defense~~ Date, Place: 1956, Kiev

Source: Knizhnaya Letopis', No 47, 1956

GROZIN, B.D., otvetstvennyy redaktor; ~~DRAYGOR~~, D.A., redaktor; D'YACHKOV, A.K., redaktor; ~~SHCHENENKO~~, B.N., redaktor; ~~SHCHENEN~~, S.V., redaktor; ~~PAYNERMAN~~, I.D., redaktor; ~~SOROKA~~, M.S., redaktor izdatel'stva; RUDENSKIY, Ya.V., tekhnicheskiy redaktor

[Increasing resistance to wear and length of service in machines]
Povyshenie iznosostoikosti i sroka sluzhby mashin. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 414 p. (MIRA 10:1)

1. Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo mashinostroitel'-noy promyshlennosti. Kiyevskaya oblastnaya organizatsiya.
(Machinery industry)

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 210 (USSR) SOV/137-57-6-10870

AUTHOR: Draygor, D.A.

TITLE: The Endurance Limit and Durability of Steel Subject to Simultaneous Friction and Repeated Alternating Loading (Predel vynoslivosti i dolgovechnost' stali v usloviyakh odnovremennogo deystviya sil treniya i povtorno-peremennykh nagruzok)

PERIODICAL: V sb.: Povysheniye iznosostoykosti i sroka sluzhby mashin. Kiyev-Moscow, Mashgiz, 1956, pp 66-71

ABSTRACT: An investigation is made of the effect of change in the physical condition of the surface layer of steel in accordance with conditions of friction (F) upon σ_w and the durability (D) of steel. The tests were run with simultaneous cyclic alternating loadings and forces of rolling F, under cantilever bending and constant pressure upon the contact surface. It is found that under these conditions the σ_w of normalized Nr 45 steel rises in comparison to the results of corresponding tests in a medium of air without F. In the presence of a surface-active lubricant (SAL) consisting of MS-20 oil and 2% oleic acid and at the same pressure on the surface of contact σ_w rises by

Card 1/2

The Endurance Limit and Durability of Steel (cont.)

SOV/137-57-6-10870

18%, a considerable hardening of the surface layer being observed in the process. An analogous effect is also observed under forces of sliding F. The peculiarity of the influence of the SAL upon the value of σ_w is explained by its hardening effect under conditions of cyclic surface deformation. It is found that the physical condition of the surface layer of steel has a particularly pronounced influence upon its D. The effect of oxidation upon the D of steel is investigated with specimens of Nr 40Kh steel hardened in water at 830°C and held in a furnace for 30 minutes, then tempered at 550° to $R_C=32-34$. It is found that oxidation of the surface reduces the D of steel by approximately 85 percent. The thickness of the oxide film has no effect upon the value of the D coefficient. The influence of pressure at the surface of contact upon the D of steel under conditions of sliding and rolling F with a SAL is investigated with specimens of Nr 40Kh steel. It is found that local structural transformations in the surface layer induced by F, also any seizing phenomena, sharply reduce the σ_w and D of steel under simultaneous subjection to forces of F and cyclic alternating loads. In this situation, failure occurs at the surface in the zone of transition structures.

L.G.

Card 2/2

DRAYGOR, D.A.; SHEVCHUK, V.A.

Wear resistance of steel and residual stresses in surface
layers. Dop. AN USSR no.5:430-433 '56. (MLRA 10:2)

1. Institut budivel'noi mekhaniki Akademii nauk USSR.
Predstavleno akademikom Akademii nauk USSR F.P. Belyankinym.
(Steel--Testing) (Mechanical wear)

~~DRAYGOR, D.A.:~~ VAL'CHUK, G.I.

Seizing of metals resulting from friction and the wear resistance
of steel subjected to repeated variable loads. Sbor.trud.Inst.stroi.
mekh.AN URSR no.22:93-99 '56. (MLRA 10:5)
(Steel--Testing) (Mechanical wear)

DRAYGOR, David Abramovich -- awarded sci degree of Doc Tech Sci for the
4 Dec 56 defense of dissertation: "Resistance to wear and to fatigue
of steel in accordance with the circumstances of its processing and
the nature of the friction" at the Council, Inst of Constr Mechanics,
AS, UkSSR; Prot No 11, 10 May 58.
(BMVO, 10-58,20)

BELYANKIN, Fedor Pavlovich [BIRLIANKIN, F.P.], akademik; DRAYGOR, D.A.
[Draigor, D.A.], doktor tekhn.nauk, otv.red.; RUDNITS'KA, P.P.,
red.; SIVACHENKO, Ye.K., tekhnred.

[Basic conceptions of mechanics in the process of their develop-
ment] Osnovni poniattia mekhaniky v protsesi ikh rozvytku.
Kyiv, Vyd-vo Akad.nauk URSR, 1958. 30 p. (MIRA 12:10)

1. Akademiya nauk USSR; Akademiya stroitel'stva i arkhitektury
USSR (for Belyankin).
(Mechanics)

DRAYGOR, D.A.

122-2-29/33

AUTHOR: Draygor, D.A., Candidate of Technical Sciences

TITLE: The Third Scientific and Technical Conference in Kiyev on the Improvement of the Wear Resistance and Service Life of Machines (Tret'ya Kiyevskaya nauchno-tekhnicheskaya konferentsiya po povysheniyu iznosostoykosti i sroka sluzhby mashin)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, No.2, pp. 81-82 (USSR).

ABSTRACT: The conference was organised by the Kiyev region of the NTO Mashprom (The Scientific and Technical Organisation of the Mechanical Engineering Industry) and by the Institute of Mechanics of Building Structures, Ac.Sc. Ukrainian SSR (Institut stroitelnoy mekhaniki AN USSR). 430 delegates representing the major institutions of the Ac.Sc. USSR and of the Ukrainian SSR, the specialised research agencies and the large Soviet plants heard and discussed 90 papers devoted to the study of the mechanism of disintegration of surface layers in machine components and to new methods of improving the wear life of components.

In a paper by Academician S.V. Serensen, entitled "Endurance Related to Wear and Fatigue", a survey of Russian and foreign studies was given with emphasis on fatigue failures caused by wear, both as a result of the mechanical consequences due to

Card1/8

122-2-29/33

The Third Scientific and Technical Conference in Kiyev on the Improvement of the Wear Resistance and Service Life of Machines

unequal wear and the formation of clearances in assemblies and as a result of a change in the physical and chemical condition of contact surfaces.

B.D. Grozin, Corresponding Member of the Ac.Sc. Ukrainian SSR, in a paper entitled "The Complex Method of Analysis of Components Working Under the Conditions of Rolling Friction" presented a method which includes the combined use of electron microscope, X-ray diffraction and spectroscopic analyses to judge the condition of the surface layers in association with wear tests and static mechanical tests under tri-axial non-uniform compression at different temperatures. It is claimed that with the help of this method, the relation between the contact endurance strength of steel and the factors defining the condition of the surface can be established.

In a paper "On Temperature Measuring Methods in the Friction Process between Solid Bodies", by S. A. Sukhov, Candidate of Technical Sciences, a method for measuring the temperature gradients in the immediate vicinity of the friction surfaces with the help of a natural thermocouple was presented. Both sliding bodies (pin and ring) are made of the same material, but the pin end face is covered with a thin layer of another metal

Card2/8

122-2-29/33
The Third Scientific and Technical Conference in Kiyev on the Improvement of the Wear Resistance and Service Life of Machines

which constitutes the natural thermocouple of which one junction is the sliding surface and the other is the bond between the pin face and the coating metal.

Great interest was aroused by the paper "The Variation of Wear Resistance of Certain Anti-friction Alloys under Nuclear Radiation" by B.L. Slin'ko. Precipitation-hardening alloys (beryllium copper 62 and nickel silicon bronze Bp. KH 1-3) have their strength and wear resistance increased by nuclear radiation. Alloys changing their properties mainly as a result of phase transformations and having a higher re-crystallisation temperature change their properties insignificantly.

In a paper "Foundations of the Cavitation-erosion Failure of Ferrous Alloys", I.N. Bogachev, Doctor of Technical Sciences, and R.I. Mints, Candidate of Technical Sciences, generalised the studies of the effect of the chemical and phase composition of iron carbon alloys on their cavitation erosion resistance.

Increasing the carbon content from 0.023 to 1.2% improves the erosion resistance. The effect of alloying is due solely to the metallographic structure obtained. A pronounced improvement of erosion resistance is obtained in spheroidal graphite cast iron

Card 3/8

122-2-29/33

The Third Scientific and Technical Conference in Kiyev on the Improvement of the Wear Resistance and Service Life of Machines

by alloying with 1% nickel and 0.3% molybdenum. Engineer L.A. Chatynyan in his paper "Investigation of the Wear of Nickel Alloys under Dry Friction at Elevated Temperatures", reported the results of his test which showed nickel alloys to have the best wear resistance at high temperatures, whilst the initial hardness is of little consequence. The optimum composition of a new alloy with a high wear resistance at 400 °C was given, whilst high-speed steel and ordinary chromium steels have little wear resistance under dry friction at high temperatures. V.P. Grechin, Candidate of Technical Sciences, concluded in his paper "The Heat Resistance of Cast Iron as the Main Factor in its Wear Resistance under Sliding Friction" that the hardness of cast iron at high temperatures (up to 850 °C) determines its wear resistance. Based on numerous studies of various cast irons, recommendations for alloying and for the application of cast irons under different conditions were given. It was noted by N.I. Kovalenko, Candidate of Technical Sciences, in his paper "The Wear Resistance of Wire Ropes" that the rubbing down of a wire rope is caused by an abrasive medium and its failure occurs before fatigue sets in. The author recommended

Card4/8

122-2-29/33

The Third Scientific and Technical Conference in Kiyev on the Improvement of the Wear Resistance and Service Life of Machines

the deposition of anti-friction metals such as cast iron or aluminium upon steel pulleys. In unlubricated operation, such deposits increase the wear life of wire ropes by a factor of 2-3. I.I. Frumin, Candidate of Technical Sciences, in his paper "Alloys for Wear-resistant Hard Facing Deposits", stated the theoretical basis and methods of alloying to obtain the desired results and surveyed the fields of application of different methods of deposition on wearing components. In his paper, "Electric Slag Method of Hard Facing for Wear Resistance", I.K. Pokhodnya, Candidate of Technical Sciences, suggested the electric slag process for hard facing of different components and concluded that this method is appropriate when large quantities of metal have to be deposited or when large numbers of components require treatment. M.V. Simonenko, Engineer, suggested in his paper "The Electrolytic Diffusion Method of Making Bi-metal Components" a novel method of manufacturing copper base alloys. The alloying proceeds at a temperature much below the fusion temperature of copper. Great economies are achieved in labour cost and in scarce metals. Small scale and automatic production procedures can be applied. Service

Card5/8

122-2-29/33

The Third Scientific and Technical Conference in Kiyev on the Improvement of the Wear Resistance and Service Life of Machines

tests have confirmed reliable operation of bi-metal components under different conditions.

In a paper "Electric Spark Hardening of Machine Components", S.S. Astaf'yev, Candidate of Technical Sciences, reported on a novel electric spark hardening process. The surface of the steel is alloyed with the electrode metal, as a result of instantaneous heat impulses occurring in rapid succession during spark discharges. A special treatment head makes high output possible. The wear resistance of machine components is said to increase 2-6 times at room temperatures and 4-5 times at elevated temperatures.

In a paper "New Anti-friction Materials and Coatings", I.Ya. Al'shits reported on work designed to evolve novel substitutes for babbitt and high-tin-content bronze alloys. The following have given good results: a) Moulded timber materials and plastics based on phenolic and other resins with different fillers (cord and cotton fibres and others), in conjunction with water lubrication. b) Metallised graphite, nylon and others for elevated temperatures. c) Graphite-loaded materials and compositions of resin and graphite for working in corrosive media.

Card6/8

122-2-29/33

The Third Scientific and Technical Conference in Kiyev on the Improvement of the Wear Resistance and Service Life of Machines

"Improvement in Wear Resistance and Service Life of Components with Large Transverse Cross-sections by the Method of Surface Quenching and Accelerated Heating in Heat Treatment Furnaces" was the subject of G.T. Fomin, Candidate of Technical Sciences, who reported that accelerated heating of steel components to achieve transition into an austenitic state for the surface layer alone makes it possible to intensify the heat treatment of components with a cross-section exceeding 40 mm. The depth of the quenched layer can be controlled without modifying the structure of the core, so achieving the best combination of wear resistance and impact strength.

N.S. Dombrovskaya, Doctor of Chemical Sciences, and Yu.M. Vinogradov, in a paper "The Improvement of the Anti-friction Properties of Metals by Means of Thermo-Chemical Surface Treatments", pointed out that, alongside nitriding and phosphating, steels can also be improved in their anti-friction properties by enrichment with chloride or sulphide on their surface. The latter methods mainly improve the anti-seizure properties, whilst the former improve wear resistance.

Sulphiding can be achieved in solid, liquid and gaseous media;

Card 7/8

The Third Scientific and Technical Conference in Kiyev on the Improve-
ment of the Wear Resistance and Service Life of Machines

122-2-29/33

chloriding, in a gaseous medium at a temperature of about 200 °C.

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Card 8/8

DRAYGOR, D.A. [Drayhor, D.A.]

The third scientific technical conference in Kiev on increasing
the wear resistance and prolonging the life of machines. Prykl.
mekh. 4 no.1:113-115 '58. (MIRA 11:4)
(Machinery)

DRAYGOR, D.A. [Drayhor, D.A.]

Third scientific technical conference on the problem of increased
wear resistance and service length of machinery. Visnyk AN URSSR
29 no.2:67-68 F '58. (MIRA 11:4)
(Machinery industry)

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1. Akademiya nauk USSR, Kiev.
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PHASE I BOOK EXPLOITATION

SOV/2310

Draygor, D. A.

Iznoosostoykost' i ustalostnaya prochnost' stali v zavisimosti ot usloviy obrabotki i protsessov treniya (Wear Resistance and Fatigue Strength of Steel Depending on Conditions of Treatment and Friction Processes)
Kiyev, Izd-vo AN Ukrainskoy SSR, 1959. 139 p. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut stroitel'noy mekhaniki.

Resp. Ed.: B. D. Grozin, Corresponding Member, Ukrainian SSR Academy of Sciences; Ed. of Publishing House: V. L. Shkurko; Tech. Ed.: I. D. Milekhin.

PURPOSE: This book is intended for scientific research workers and engineering personnel in machinery manufacture.

COVERAGE: The material presented in this book deals with the results of experimental studies of the effect of machining and heat treatment on the wear resistance and fatigue strength of steel. Also investigated was the fatigue strength of steel under the simultaneous action of friction and cyclic loads. The book contains microphotographs showing the structure of metal and

Card 1/5

Wear Resistance and Fatigue (Cont.)

SOV/2310

cracks in parts which failed due to various causes. Some of the testing apparatus is described and illustrated. There are 151 references: 130 Soviet, 16 English, and 5 German.

TABLE OF CONTENTS:

Introduction	3
Ch. I. The Physical State of the Surface Layer of Metal Following Machining	
Microgeometry and hardening of surface layer of metal in machining	11
The effect of feed on the depth and the intensity of hardening and on structural changes in the surface layer	11
The effect of tool advance on the depth and the intensity of hardening of the surface layer of the metal in turning	13
The effect of the depth of cut on the depth and intensity of hardening	15
The effect of cutting speed on the surface layer structure in turning hardened steel	15
	16

Card 2/5

Wear Resistance and Fatigue (Cont.)

80V/2310

The nature of structural changes of the surface layer of hardened steel following machining	20
The effect of steel structure on the surface quality in turning	25
The effect of cutting speed and the properties of metal on the waviness of the machined surface	26
Relationship between hardening and the microscopic irregularities of the machined surface	27
Ch. II. Wear Resistance and the Fatigue Coefficient of Steel as Related to the Physical Condition of the Surface Layer After Machining	29
The effect of microgeometry of the machined surface on the wear resistance of steel	30
Metal structure of the friction surface	33
Effect of hardening of the surface layer after machining on the wear resistance of steel in sliding friction	36
Effect of surface layer structure on resistance to wear depending on heat treatment, machining, and friction regime	39

Card 3/5

Wear Resistance and Fatigue (Cont.)

80V/2310

Effect of the nonhomogeneity of the surface layer structure of steel on wear resistance	52
Stresses below the surface layer of steel and resistance to wear	57
The physical state of the surface layer and its resistance to repeated variable loads	68
Ch. III. The Effect of Friction Conditions on Fatigue Strength and Service Life of Steel	
The effect of oxidation of the friction surface on strength and service life of steel	77
Hardening of the surface layer during the process of friction and the fatigue strength of steel	85
The effect of surface active lubrication on fatigue strength and service life of steel under friction forces	89
Fatigue strength of steels due to application of friction forces and to reversed cyclic loads	100
Optimum friction surface and service life of steel	104
Effect of the speed of friction on the fatigue limit and service life of steel under the simultaneous action of friction forces and reversed cyclic loads	110
	112

Card 4/5

Wear Resistance and Fatigue (Cont.)

SOV/2310

Seizure of metal due to frictions and the length of service life
of steel under reversed cyclic loads

113

Conclusions

127

Bibliography

134

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Card 5/5

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AUTHOR: Draygor, D. A.

TITLE: Effect of working technology on the wear and strength of steel

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 7, 1962, 3, abstract
7B10 (V sb. "Vopro. vnedreniya v proiz-vo peredovoy tekhnol.,
ulucheniya kachestva vypuskayemoy produktsii i snizheniya yeye
sebestoimosti", Kiyev, AN UkrSSR, 1959, 44-49)

TEXT: It is pointed out that, lately, particular attention has been given to increasing the life of machine parts by improving the resistance to wear of their surface layers, which depends on the conditions of mechanical and heat treatment. It was found that during the turning of steels of stable structures, a change in the cutting speed results in changes of the microgeometry, hardening and strain of the surface layer, owing to nonuniform plastic deformation. During the turning of annealed steels, no structural changes could be observed in the surface layers. A considerable workhardening can be observed if turning is effected with tools having large negative angles. If the cutting speed of steels of metastable structure is increased, depth and intensity of structural changes grow. With the blunting of the cutting tools, the depth of structural

Card 1/2

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Effect of working technology ...

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changes of the surface layer considerably increases. The grinding of hardened steels without cooling causes the origination of burns in the surface layer. The resistance to wear and the fatigue strength of steel depend on the physical state of the surface layer after mechanical working. It is pointed out that residual compressive stresses arising during the mechanical working process generally increase the fatigue limit of steels during repeated bending. An optimum cutting speed also improves the resistance to wear of steel. A change in depths of cut up to 2.5 mm and in the magnitudes of finish feed does not affect the resistance to wear. The grinding of hardened steels with a wavy surface causes phenomena of local burns which reduce the steel wear resistance by 60%. The fatigue limit increases with an improved finish of the machined surface. High-speed turning results in an increase of the fatigue limit of steel by 50% owing to the formation on the machined surface of zones of secondary hardening which is accompanied by the origination of residual compressive stresses.

L. Bozin

[Abstracter's note: Complete translation]

Card 2/2

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AUTHORS: Hrozin, B.D., Corresponding Member AS UkrSSR, Drayhor, D.A., Pushkar"ov, V.V.

TITLE: The Effect of the Sequence of Mechanical Machining Operations on the Physical State of the Surface Layers of Crankshaft Pins of the C-80 Tractor

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 9, 1959, pp 976-981 (USSR)

ABSTRACT: Referring to the preceding work [Ref 1], the paper brings forward that the structural state of the surface layers of the machine parts quenched with low temper on martensite does not only depend on the final machining operations, but also on the foregoing ones. It also suggests a selection of the sequence of machining operations especially for parts of low temper quenching. The principle of this selection consists in the following: the preceding operations should not form areas of structural dissimilarities on the component parts. In case such dissimilarities on the

Card 1/3

30V/21-59-9-11/25

The Effect of the Sequence of Mechanical Machining Operations on the Physical State of the Surface Layers of Crankshaft Pins of the C-80 Tractor

metal are formed, the subsequent operation should completely eliminate them and not cause new ones. The sequence of technological processes for producing tractor crankshafts practiced at one of the USSR plants was: coarse grinding, quenching by high frequency current on martensite, semi-cleaning grinding, cleaning grinding and superfinish. It has however been stated that coarse grinding before quenching with high-frequency current causes the formation of burns which are not eliminated by subsequent operations including superfinishing. Since such burn areas left after finishing operations lead to a destruction of the surface layers of the crankshaft pins during work, they are not to be tolerated. An increased cleaning of the surface of crankshaft pins before quenching with high-frequency current by turning it with a sharp cutter or by grinding, ensures that the surface layers have no zones of structural changes.

Card 2/3